[FIG.1]

100 CLIENT

104 SIP SESSION

101 RELAY SERVER

104 SIP SESSION

103 APPLICATION SERVER

102 NETWORK

105 APPLICATION SESSION

[FIG.2]

100 CLIENT

106 CLIENT REQUEST TRANSMISSION SECTION

115 CLIENT RESPONSE RECEPTOIN SECTION

116 CLIENT CONFIRMATION TRANSMISSION SECTION

119 CLIENT SERVICE SECTION

101 RELAY SERVER

107 RELAY SERVER REQUEST RECEPTION SECTION

108 AUTHENTICATION SECTION

109 APPLICATION SERVER SEARCH SECTION

110 RELAY SERVER RELAY SECTION

114 RELAY SERVER RESPONSE RELAY SECTION

117 RELAY SERVER CONFIRMATION RELAY SECTION

103 APPLICATION SERVER

111 APPLICATION SERVER REQUEST RECEPTION SECTION

112 RECEPTION DECISION SECTION

113 APPLICATION SERVER RESPONSE TRANSMISSION SECTION

118 APPLICATION SERVER CONFIRMATION RECEPTION SECTION

120 APPLICATION SERVER SERVICE SECTION

[FIG.3]

100 CLIENT

101 RELAY SERVER

103 APPLICATION SERVER

SERVICE OF APPLICATION SERVER

[FIG.4]

100 CLIENT

119 CLIENT SERVICE SECTION

121 CLIENT DISCONNECTION REQUEST TRANSMISSION SECTION

126 CLIENT DISCONNECTION RESPONSE RECEPTION SECTION

101 RELAY SERVER

122 RELAY SERVER DISCONNECTION REQUEST RELAY SECTION

125 RELAY SERVER DISCONNECTION RESPONSE RELAY SECTION

127 SESSION CONTROL SECTION

128 TIME BILLING SECTION

103 APPLICATION SERVER

120 APPLICATION SERVER SERVICE SECTION

123 APPLICATION SERVER DISCONNECTION REQUEST RECEPTION SECTION

124 APPLICATION SERVER DISCONNECTION RESPONSE TRANSMISSION SECTION

[FIG.5]

100 CLIENT

119 CLIENT SERVICE SECTION

101 RELAY SERVER

131 APPLICATION BILLING SECTION

103 APPLICATION SERVER

120 APPLICATION SERVER SERVICE SECTION

129 APPLICATION SERVER BILLING SECTION

130 BILLING INFORMATION NOTIFICATION SECTION

[FIG.6]

100 CLIENT

119 CLIENT SERVICE SECTION

121 CLIENT DISCONNECTION REQUEST TRANSMISSION SECTION

126 CLIENT DISCONNECTION RESPONSE RECEPTION SECTION

101 RELAY SERVER

122 RELAY SERVER DISCONNECTION REQUEST RELAY SECTION

125 RELAY SERVER DISCONNECTION RESPONSE RELAY SECTION

131 APPLICATION BILLING SECTION

103 APPLICATION SERVER

120 APPLICATION SERVER SERVICE SECTION

123 APPLICATION SERVER DISCONNECTION REQUEST RECEPTION SECTION

124 APPLICATION SERVER DISCONNECTION RESPONSE TRANSMISSION SECTION

129 APPLICATION SERVER BILLING SECTION

130 BILLING INFORMATION NOTIFICATION SECTION

[FIG.7]

100 CLIENT

200 CLIENT APPLICATION SECTION

201 SIP CLIENT SECTION

EXCHANGE OF APPLICATION DATA

101 RELAY SERVER

202 USER AUTHENTICATION SECTION

203 APPLICATION SERVER SEARCH SECTION

204 SESSION CONTROL SECTION

205 BILLING CONTROL SECTION

SIP REQUEST MESSAGE

SIP RESPONSE MESSAGE

206 SIP SERVER SECTION

SIP REQUEST MESSAGE

SIP RESPONSE MESSAGE

103 APPLICATION SERVER

207 SERVER APPLICATION SECTION

208 APPLICATION SERVER SIP CLIENT SECTION

[FIG.8]

100 CLIENT

101 RELAY SERVER

103 APPLICATION SERVER

SERVICE OF APPLICATION SERVER

SERVICE OF CHANGED APPLICATION SERVER

[FIG.9]

101 RELAY SERVER

100 CLIENT

SERVICE OF APPLICATION SERVER

103 APPLICATION SERVER

SERVICE OF APPLICATION SERVER

300 SECOND APPLICATION SERVER

[FIG.10]

100 CLIENT

101 RELAY SERVER

103 APPLICATION SERVER

300 APPLICATION SERVER

SERVICE OF FIRST APPLICATION SERVER

SERVICE OF SECOND APPLICATION SERVER

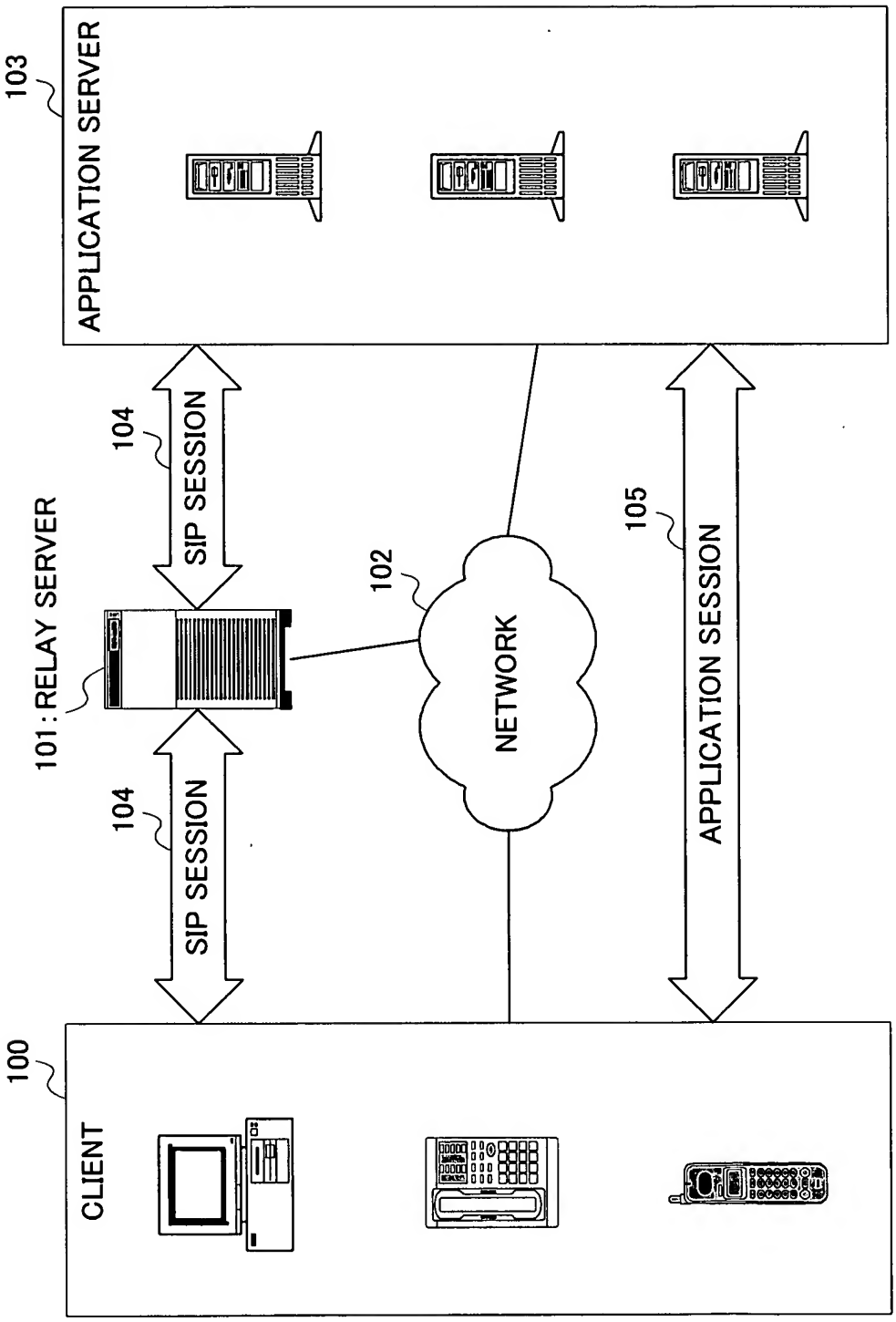
103
APPLICATION SERVER
104
SIP SESSION
101:RELAY SERVER
102
NETWORK
105
APPLICATION SESSION
104
SIP SESSION
100
CLIENT

FIG.1

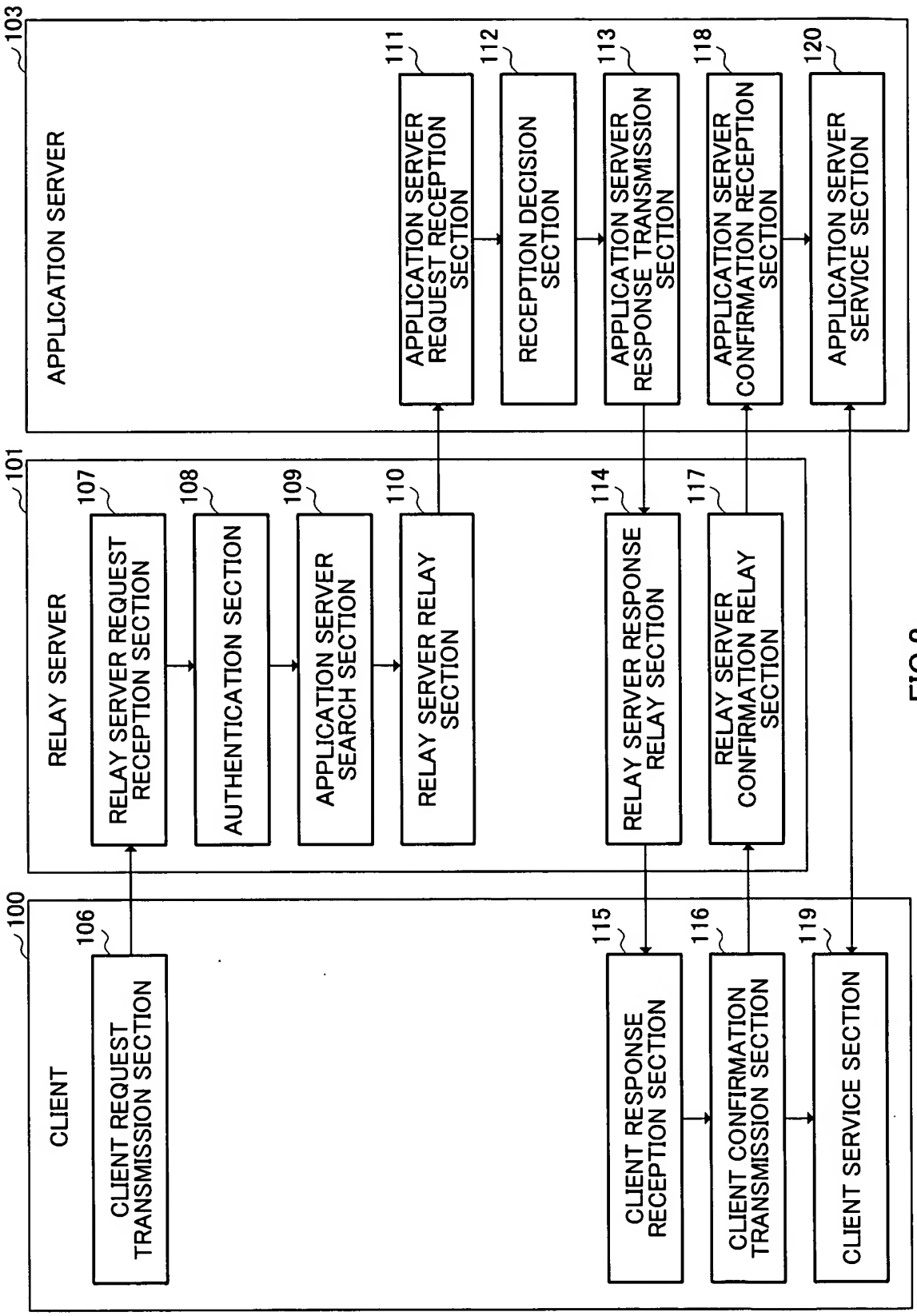
100
CLIENT
106
CLIENT REQUEST TRANSMISSION SECTION
115
CLIENT RESPONSE RECEPTION SECTION
116
CLIENT CONFIRMATION TRANSMISSION SECTION
119
CLIENT SERVICE SECTION
101
RELAY SERVER
107
RELAY SERVER REQUEST RECEPTION SECTION
108
AUTHENTICATION SECTION
109
APPLICATION SERVER SEARCH SECTION
110
RELAY SERVER RELAY SECTION
114
RELAY SERVER RESPONSE RELAY SECTION
117
RELAY SERVER CONFIRMATION RELAY SECTION
103
APPLICATION SERVER
111
APPLICATION SERVER REQUEST RECEPTION SECTION
112
RECEPTION DECISION SECTION
113
APPLICATION SERVER RESPONSE TRANSMISSION SECTION
118
APPLICATION SERVER CONFIRMATION RECEPTION SECTION
120
APPLICATION SERVER SERVICE SECTION

FIG.2

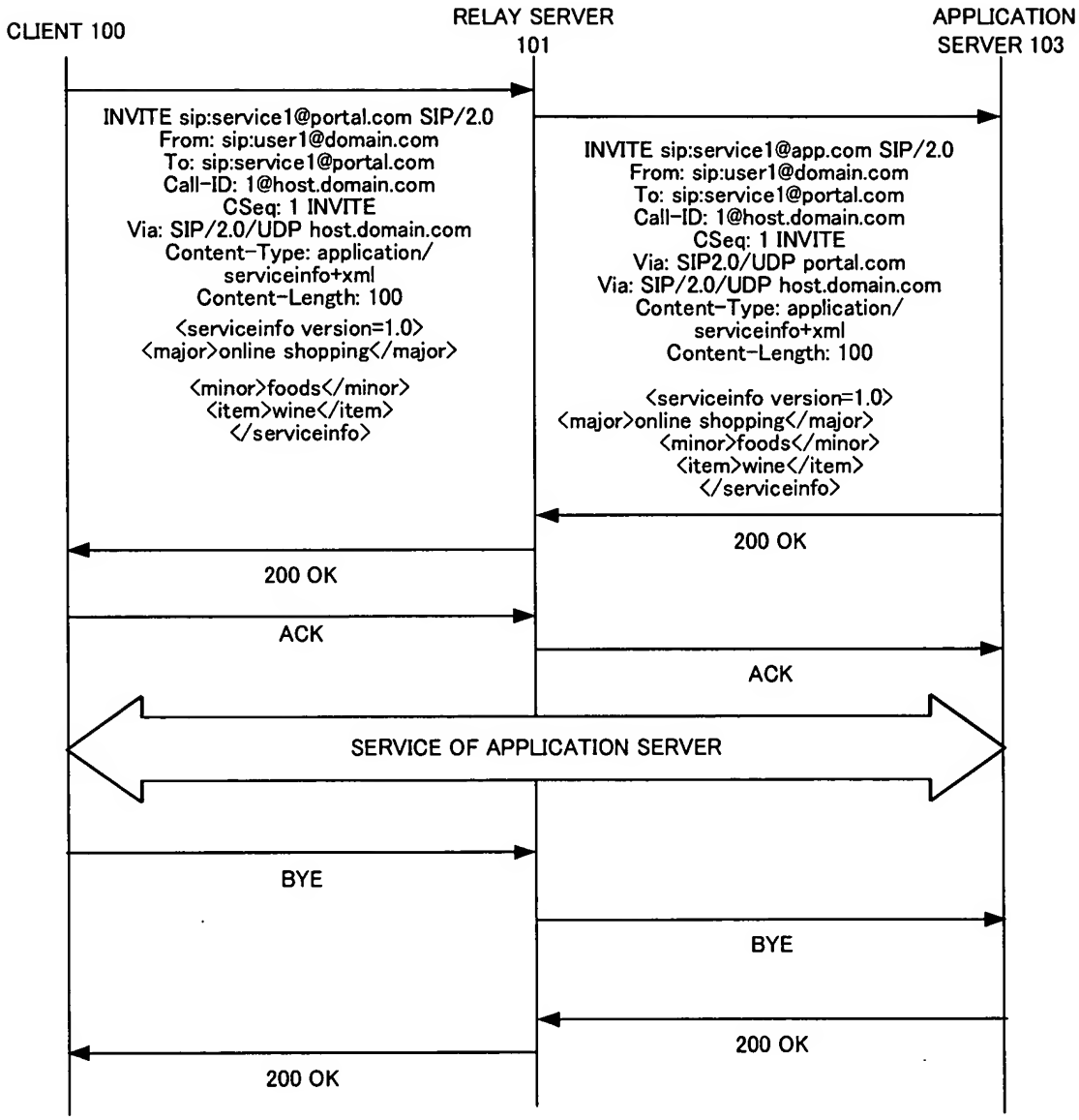
CLIENT 100
RELAY SERVER 101
APPLICATION SERVER 103
INVITE sip:service1@portal.com SIP/2.0
From: sip:user1@domain.com
To: sip:service1@portal.com
Call-ID: 1@host.domain.com
CSeq: 1 INVITE
Via: SIP/2.0/UDP host.domain.com
Content-Type: application/ serviceinfo+xml
Content-Length: 100
<serviceinfo version=1.0>
<major>online shopping</major>
<minor>foods</minor>
<item>wine</item>
</serviceinfo>
INVITE sip:service1@app.com SIP/2.0
From: sip:user1@domain.com
To: sip:service1@portal.com
Call-ID: 1@host.domain.com
CSeq: 1 INVITE
Via: SIP2.0/UDP portal.com
Via: SIP/2.0/UDP host.domain.com
Content-Type: application/ serviceinfo+xml
Content-Length: 100
<serviceinfo version=1.0>
<major>online shopping</major>
<minor>foods</minor>
<item>wine</item>
</serviceinfo>
200 OK
200 OK
ACK
ACK
SERVICE OF APPLICATION SERVER
BYE
BYE
200 OK
200 OK

FIG.3

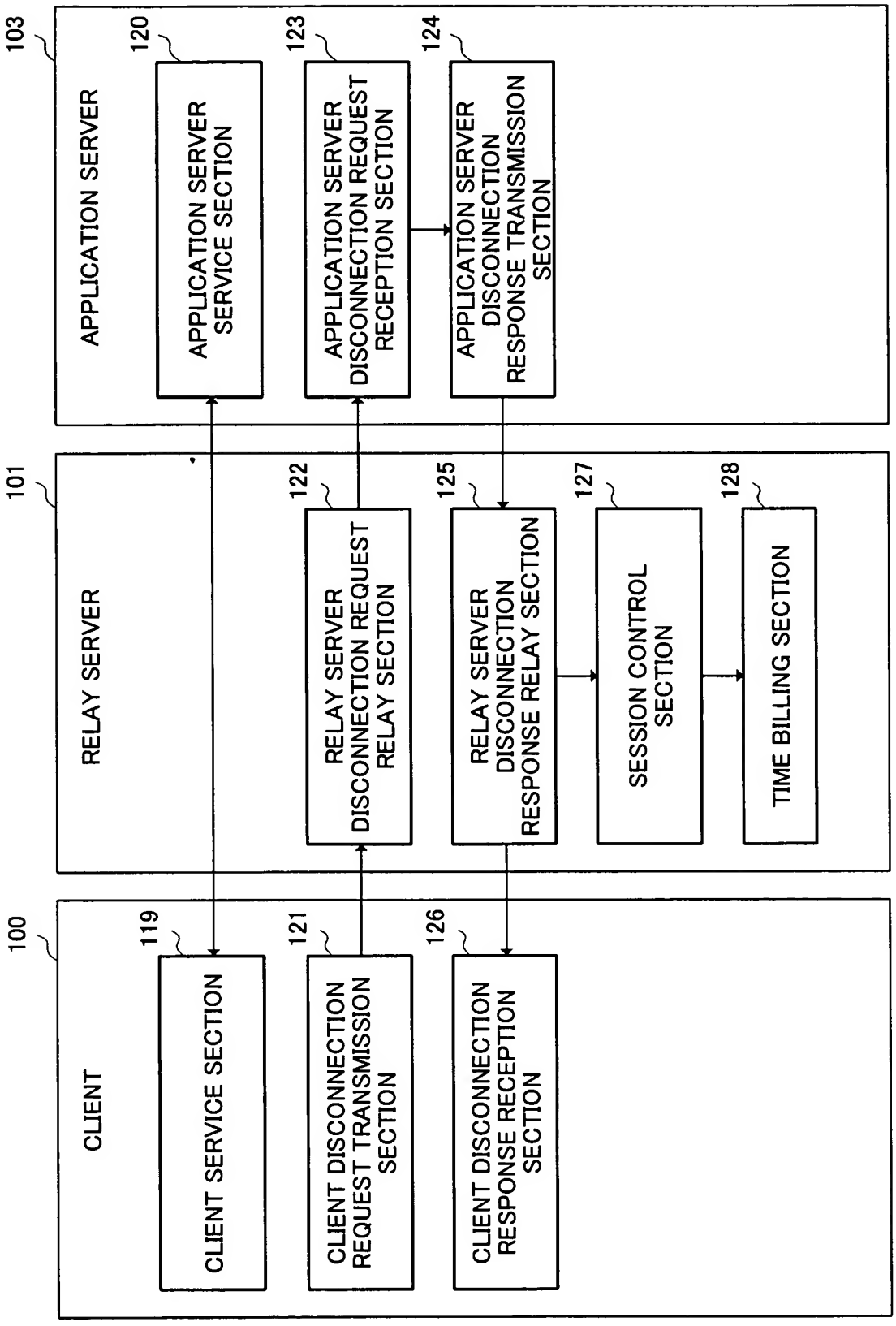
100
CLIENT
119
CLIENT SERVICE SECTION
121
CLIENT DISCONNECTION REQUEST TRANSMISSION SECTION
126
CLIENT DISCONNECTION RESPONSE RECEPTION SECTION
101
RELAY SERVER
122
RELAY SERVER DISCONNECTION REQUEST RELAY SECTION
125
RELAY SERVER DISCONNECTION RESPONSE RELAY SECTION
127
SESSION CONTROL SECTION
128
TIME BILLING SECTION
103
APPLICATION SERVER
120
APPLICATION SERVER SERVICE SECTION
123
APPLICATION SERVER DISCONNECTION REQUEST RECEPTION SECTION
124
APPLICATION SERVER DISCONNECTION RESPONSE TRANSMISSION SECTION

FIG.4

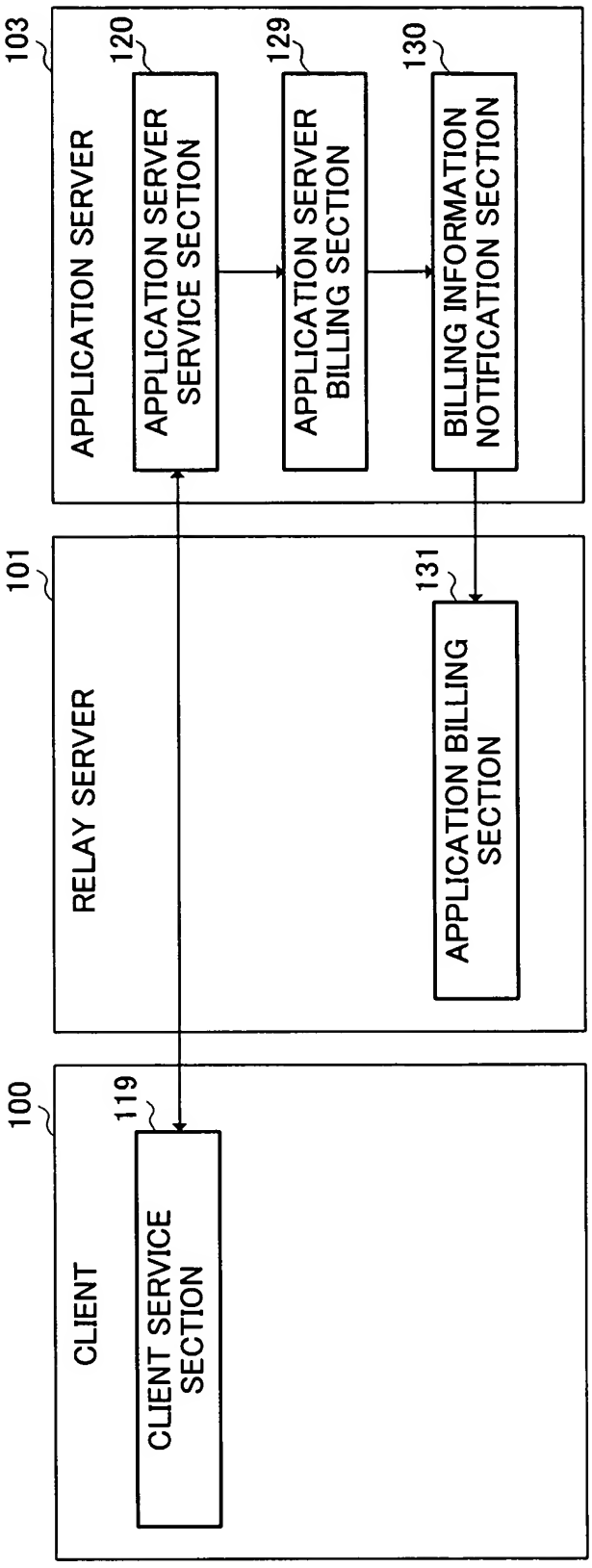
103
APPLICATION SERVER
120
APPLICATION SERVER SERVICE SECTION
129
APPLICATION SERVER BILLING SECTION
130
BILLING INFORMATION NOTIFICATION SECTION
101
RELAY SERVER
131
APPLICATION BILLING SECTION
100
CLIENT
119
CLIENT SERVICE SECTION

FIG.5

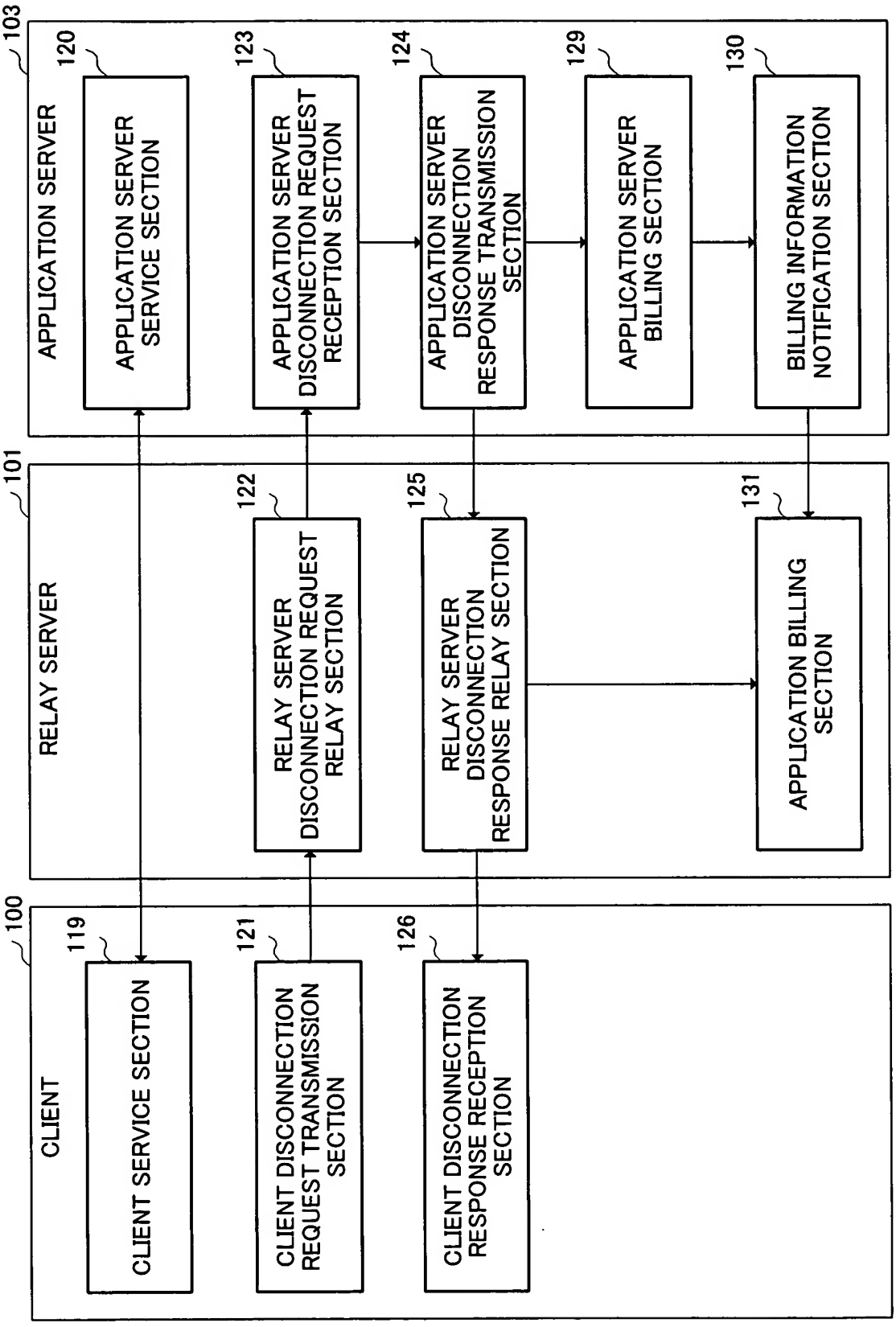
103
APPLICATION SERVER
120
APPLICATION SERVER SERVICE SECTION
123
APPLICATION SERVER DISCONNECTION REQUEST RECEPTION SECTION
124
APPLICATION SERVER DISCONNECTION RESPONSE TRANSMISSION SECTION
129
APPLICATION SERVER BILLING SECTION
130
BILLING INFORMATION NOTIFICATION SECTION
101
RELAY SERVER
122
RELAY SERVER DISCONNECTION REQUEST RELAY SECTION
125
RELAY SERVER DISCONNECTION RESPONSE RELAY SECTION
131
APPLICATION BILLING SECTION
100
CLIENT
119
CLIENT SERVICE SECTION
121
CLIENT DISCONNECTION REQUEST TRANSMISSION SECTION
126
CLIENT DISCONNECTION RESPONSE RECEPTION SECTION

FIG.6

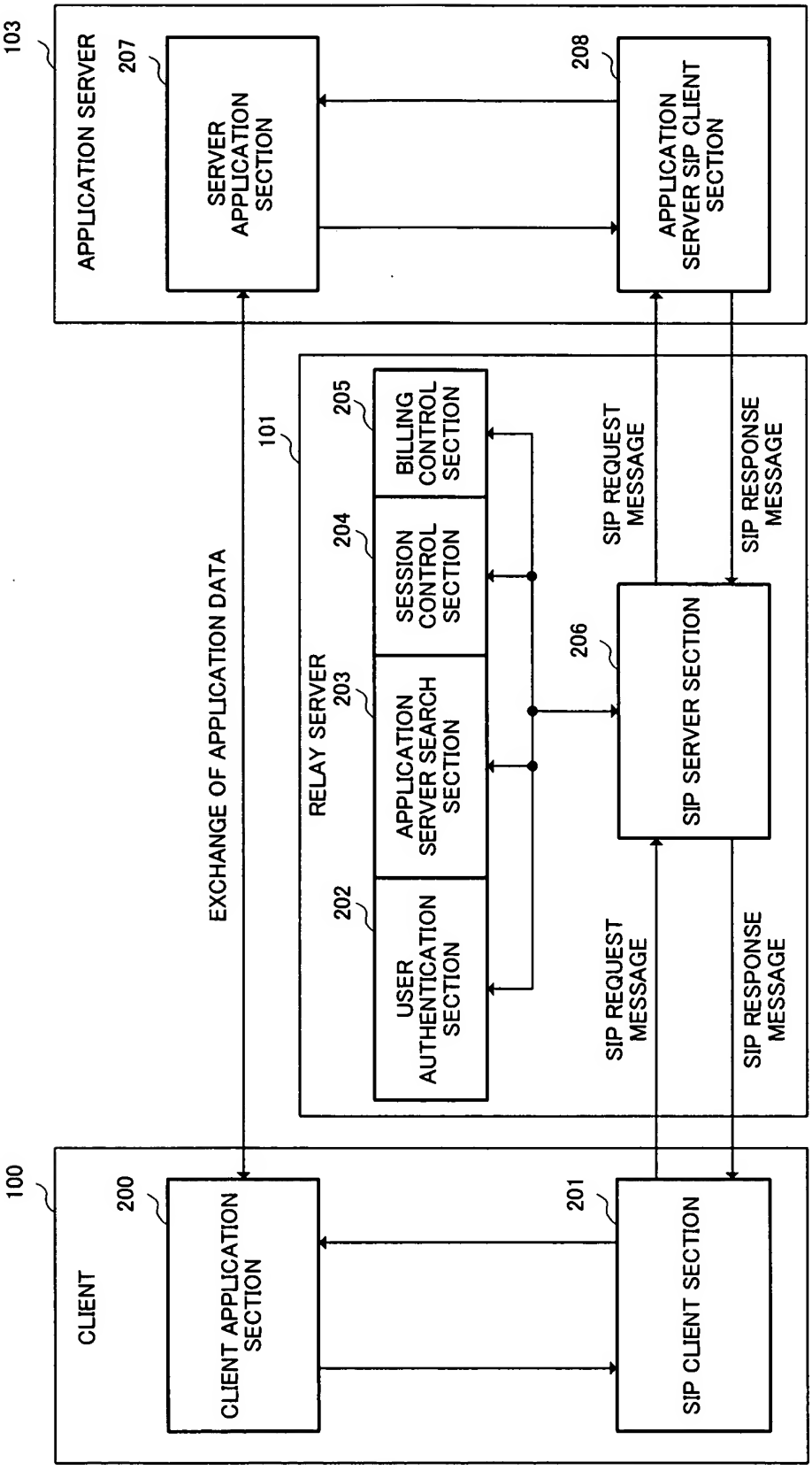
100
CLIENT
200
CLIENT APPLICATION SECTION
201
SIP CLIENT SECTION
EXCHANGE OF APPLICATION DATA
101
RELAY SERVER
202
USER AUTHENTICATION SECTION
203
APPLICATION SERVER SEARCH SECTION
204
SESSION CONTROL SECTION
205
BILLING CONTROL SECTION
206
SIP SERVER SECTION
SIP REQUEST MESSAGE
SIP RESPONSE MESSAGE
SIP REQUEST MESSAGE
SIP RESPONSE MESSAGE
103
APPLICATION SERVER
207
SERVER APPLICATION SECTION
208
APPLICATION SERVER SIP CLIENT SECTION

FIG.7

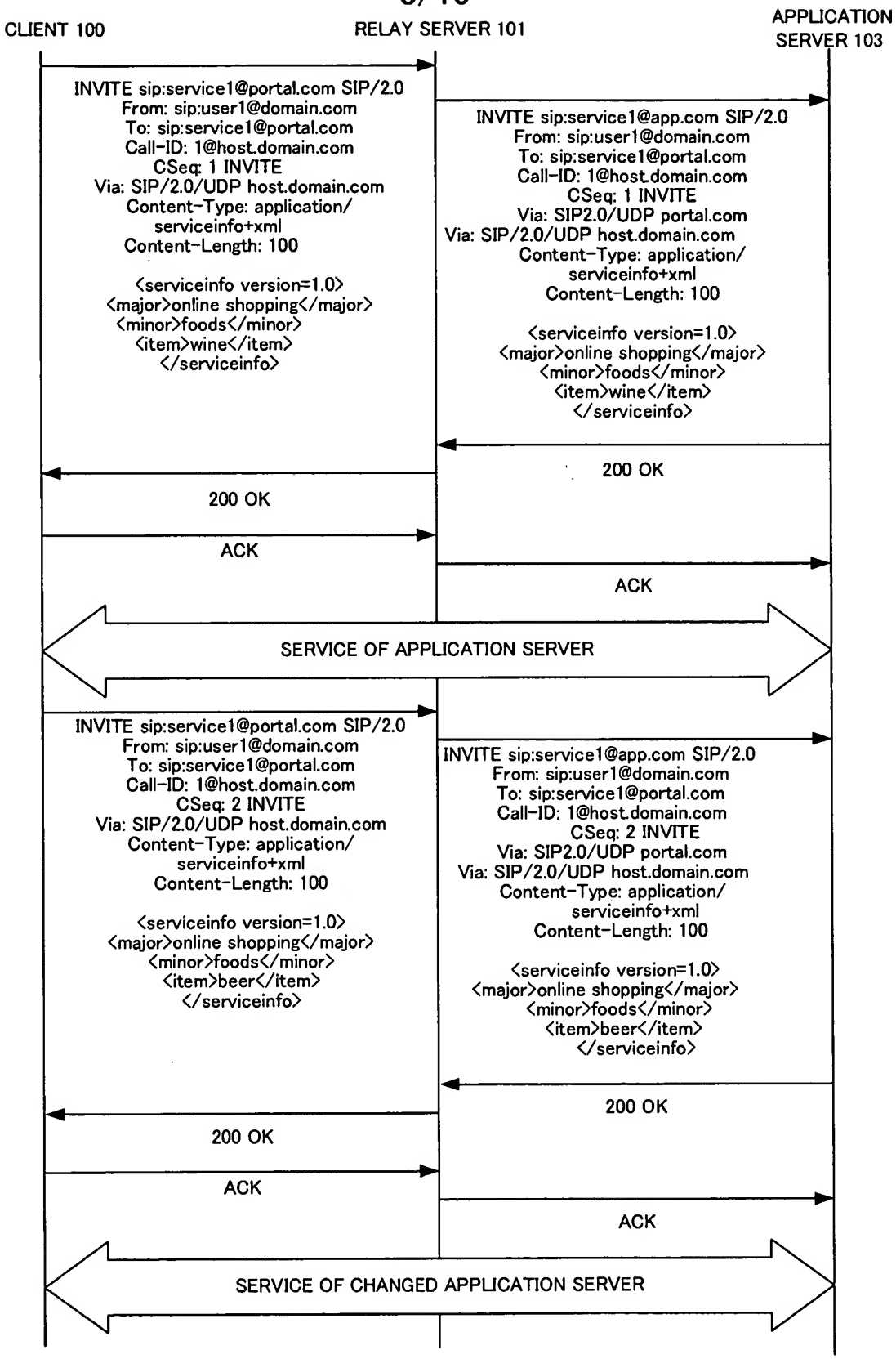
CLIENT 100
RELAY SERVER 101
APPLICATION SERVER 103
INVITE sip:service1@portal.com SIP/2.0
From: sip:user1@domain.com
To: sip:service1@portal.com
Call-ID: 1@host.domain.com
CSeq: 1 INVITE
Via: SIP/2.0/UDP host.domain.com
Content-Type: application/ serviceinfo+xml
Content-Length: 100
<serviceinfo version=1.0>
<major>online shopping</major>
<minor>foods</minor>
<item>wine</item>
</serviceinfo>
INVITE sip:service1@app.com SIP/2.0
From: sip:user1@domain.com
To: sip:service1@portal.com
Call-ID: 1@host.domain.com
CSeq: 1 INVITE
Via: SIP2.0/UDP portal.com
Via: SIP/2.0/UDP host.domain.com
Content-Type: application/ serviceinfo+xml
Content-Length: 100
<serviceinfo version=1.0>
<major>online shopping</major>
<minor>foods</minor>
<item>wine</item>
</serviceinfo>
200 OK
200 OK
ACK
ACK
SERVICE OF APPLICATION SERVER
INVITE sip:service1@portal.com SIP/2.0
From: sip:user1@domain.com
To: sip:service1@portal.com
Call-ID: 1@host.domain.com
CSeq: 2 INVITE
Via: SIP/2.0/UDP host.domain.com
Content-Type: application/ serviceinfo+xml
Content-Length: 100
<serviceinfo version=1.0>
<major>online shopping</major>
<minor>foods</minor>
<item>beer</item>
</serviceinfo>
INVITE sip:service1@app.com SIP/2.0
From: sip:user1@domain.com
To: sip:service1@portal.com
Call-ID: 1@host.domain.com
CSeq: 2 INVITE
Via: SIP2.0/UDP portal.com
Via: SIP/2.0/UDP host.domain.com
Content-Type: application/ serviceinfo+xml
Content-Length: 100
<serviceinfo version=1.0>
<major>online shopping</major>
<minor>foods</minor>
<item>beer</item>
</serviceinfo>
200 OK
200 OK
ACK
ACK
SERVICE OF CHANGED APPLICATION SERVER

FIG.8

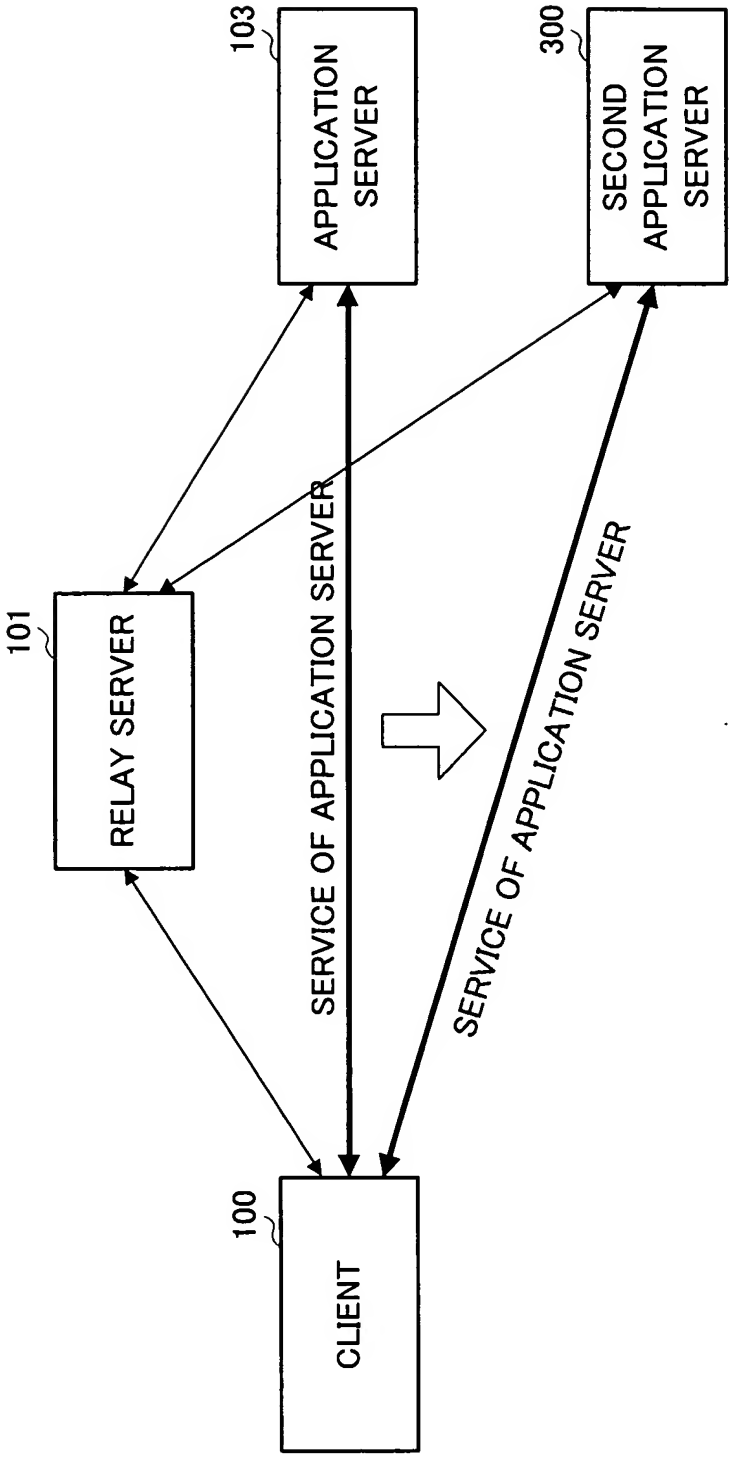
103
APPLICATION SERVER
300
SECOND APPLICATION SERVER
101
RELAY SERVER
SERVICE OF APPLICATION SERVER
SERVICE OF APPLICATION SERVER
100
CLIENT

FIG.9

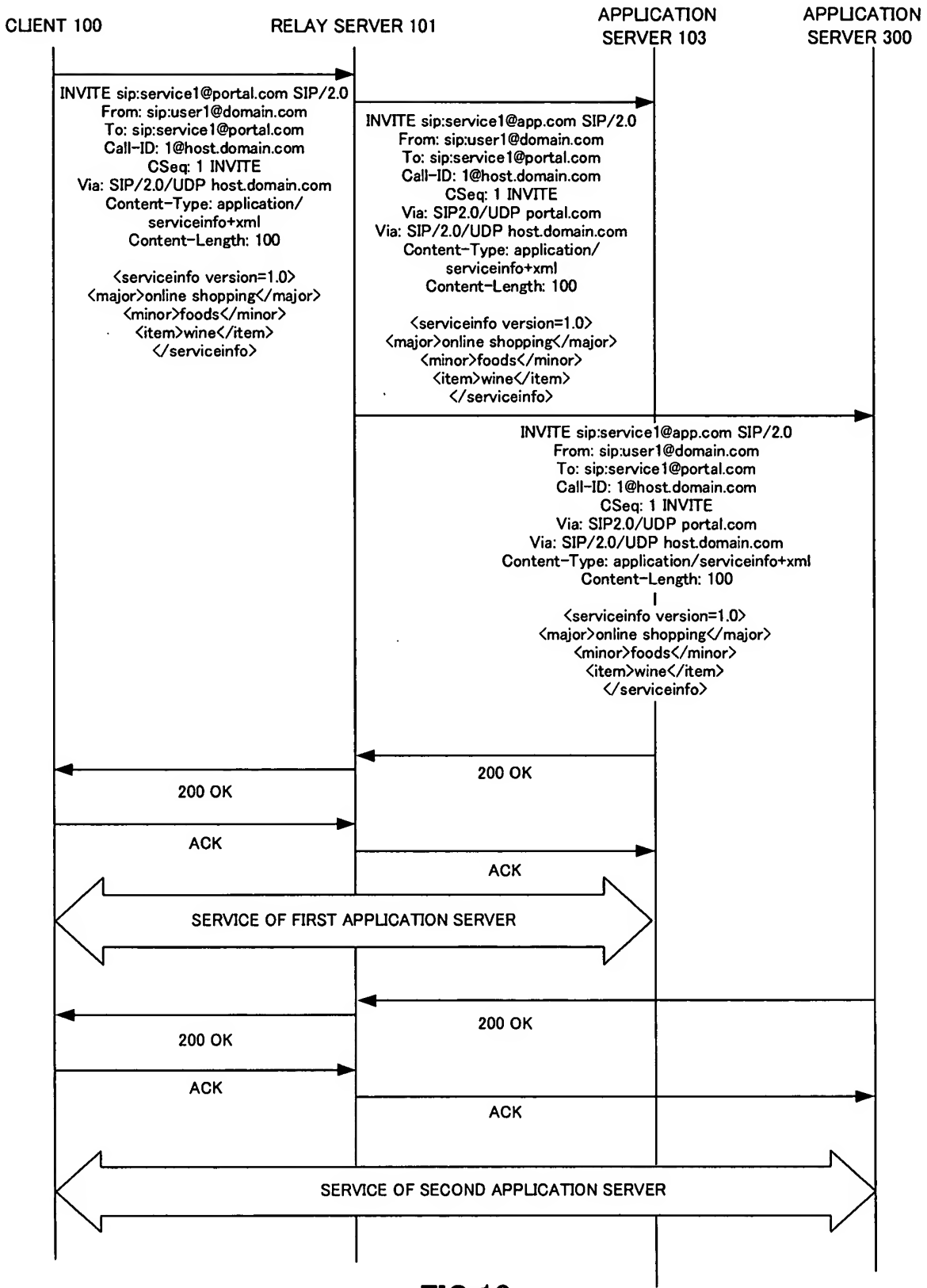
CLIENT 100
RELAY SERVER 101
APPLICATION SERVER 103
APPLICATION SERVER 300
INVITE sip:service1@portal.com SIP/2.0
From: sip:user1@domain.com
To: sip:service1@portal.com
Call-ID: 1@host.domain.com
CSeq: 1 INVITE
Via: SIP/2.0/UDP host.domain.com
Content-Type: application/ serviceinfo+xml
Content-Length: 100
<serviceinfo version=1.0>
<major>online shopping</major>
<minor>foods</minor>
<item>wine</item>
</serviceinfo>
INVITE sip:service1@app.com SIP/2.0
From: sip:user1@domain.com
To: sip:service1@portal.com
Call-ID: 1@host.domain.com
CSeq: 1 INVITE
Via: SIP2.0/UDP portal.com
Via: SIP/2.0/UDP host.domain.com
Content-Type: application/ serviceinfo+xml
Content-Length: 100
<serviceinfo version=1.0>
<major>online shopping</major>
<minor>foods</minor>
<item>wine</item>
</serviceinfo>
INVITE sip:service1@app.com SIP/2.0
From: sip:user1@domain.com
To: sip:service1@portal.com
Call-ID: 1@host.domain.com
CSeq: 1 INVITE
Via: SIP2.0/UDP portal.com
Via: SIP/2.0/UDP host.domain.com
Content-Type: application/serviceinfo+xml
Content-Length: 100
<serviceinfo version=1.0>
<major>online shopping</major>
<minor>foods</minor>
<item>wine</item>
</serviceinfo>
200 OK
200 OK
ACK
ACK
SERVICE OF FIRST APPLICATION SERVER
200 OK
200 OK
ACK
ACK
SERVICE OF SECOND APPLICATION SERVER

FIG.10